

FIG. 1

FIG. 2

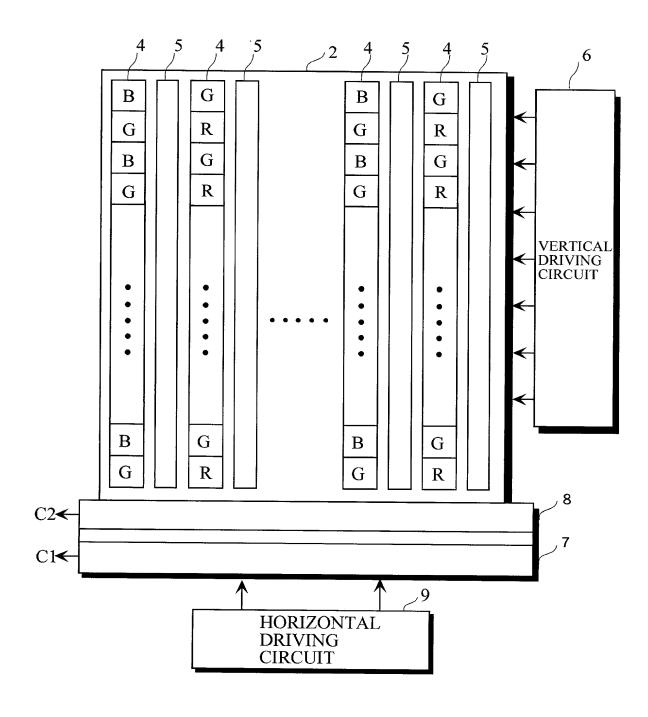


FIG. 3

ODD FIELD (a) """ """ """ """ """ """ """	-
(b) $_{D3}$ GRGRGR · · · · · GRGRGR · · · · ·	- \ L2
$(c)_{D2}$ BGBGBG · · · · · BGBGBG · · · · ·	$- \rangle_{L1}^{L2}$
(d)D1 GRGRGR ···· GRGRGR ····	$-\int_{\mathbf{L}0}^{\mathbf{L}0}$
(e) $_{\mathrm{D}0}$ BGBGBG · · · · · BGBGBG · · · · ·	
(f) —	· 1,
(g) EVEN FIELD ##	
(g)	1.2
(g) \mathbb{G} G	L2
(a) $GRGRGR$ · · · · · $GRGRGR$ · · · · · · · · · · · · · · · · · · ·	L2 L1 L0

FIG. 4

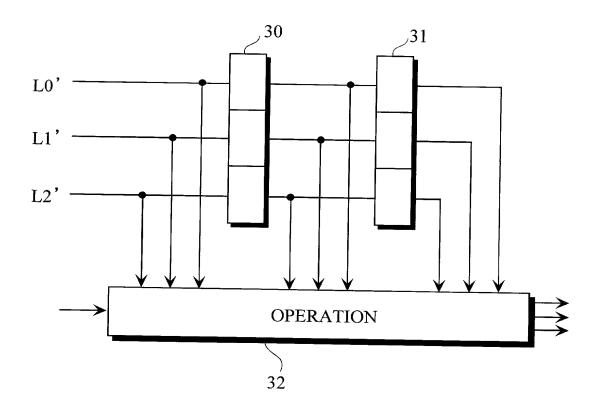


FIG. 5

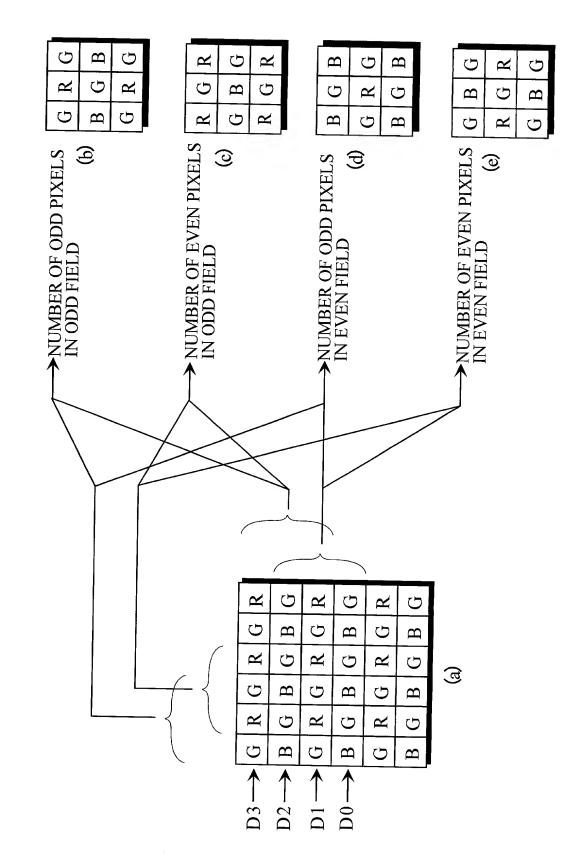


FIG. 6

ODD FIELD	METHOD OF INTERPOLATING G, R, B SIGNAL
ODD PIXEL G11 R12 G13 B21 G22 B23 G31 R32 G33	$Gh = g22$ $Bh = (b21+b23)/2$ $Rh = \frac{g22 * r12}{g12} = \frac{2(g22 * r12)}{g11+g13}$ $Gv = g22$ $Rv = (r12+r32)/2$ $Bv = \frac{g22 * b21}{g21} = \frac{2(g22 * b21)}{g11+g31}$
EVEN PIXEL R11 G12 R13 G21 B22 G23 R31 G32 R33	$Bh = b22$ $Gh = (g21+g23)/2$ $Rh = \frac{g22 * r12}{g12} = \frac{(g21+g23)(r11+r13)}{4g12}$ $Bv = b22$ $Gv = (g12+g32)/2$ $Rv = \frac{r21 * g22}{g21} = \frac{(r11+r31)(g12+g32)}{4g21}$

FIG. 7

ODD/ EVEN FIELD	METHOD OF CALCULATING VERTICAL CORRELATED VALUE (Sv) AND HORIZONTAL CORRELATED VALUE (Sh)
D11 D12 D13 D21 D22 D23 D31 D32 D33	$Sv = (d_{11}+2 \times d_{12}+d_{13}) - (d_{21}+2 \times d_{22}+d_{23}) $ $+ (d_{21}+2 \times d_{22}+d_{23}) - (d_{31}+2 \times d_{32}+d_{33}) $ $Sh = (d_{11}+2 \times d_{21}+d_{31}) - (d_{12}+2 \times d_{22}+d_{32}) $ $+ (d_{12}+2 \times d_{22}+d_{32}) - (d_{18}+2 \times d_{23}+d_{33}) $

\$ **1 y**Bo Kv YND YDDING MEICHLING YND YDDING MEICHLING AND ADDING WEIGHTING Ϋ́ MEAUS CALCULATION TEANS Gh Rh Bv Š Bv Bh 3 VALUE CALCULATION CIRCUIT HORIZONTAL DIRECTION CORRELATED VERTICAL DIRECTION CORRELATED CALCULATION NEKTICAL INTERPOLATION CIRCUIT 4 2 02 101 103 106108 Sel L2 Γ 0 Sel G GAIN RGAIN **B** GAIN IH-DI 1H-DL MICROCOMPUTER 105 ODD PIXEL /EVEN PIXEL RGB INTEGRATION ODD LINE /EVEN LINE 104 SYNCHRONIZING SIGNAL GENERATION CIRCUIT CDS TIMING PULSE FOR DRIVING CCD TIMING GENERATION CIRCUIT CLOCK SIGNAL

FIG. 8

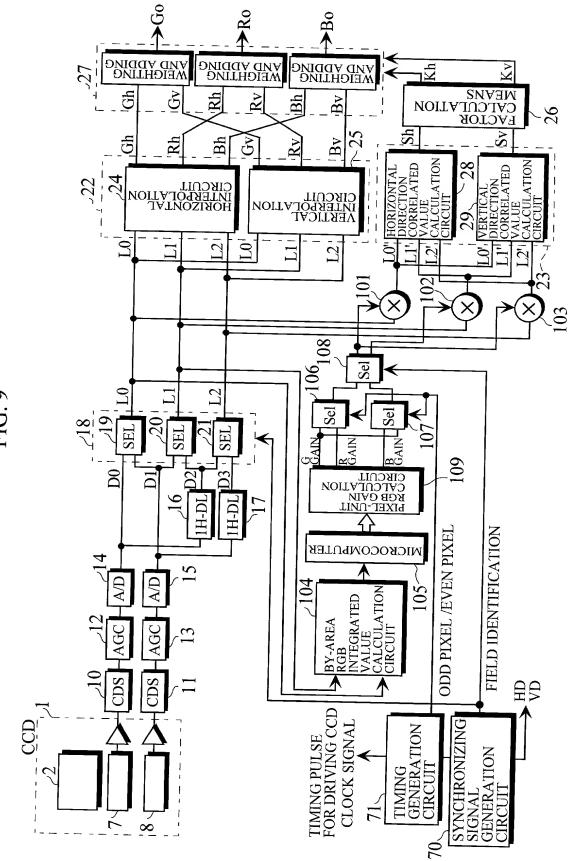


FIG. 9

FIG. 10

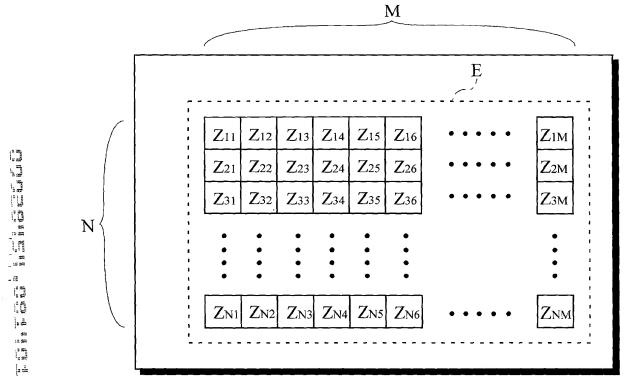
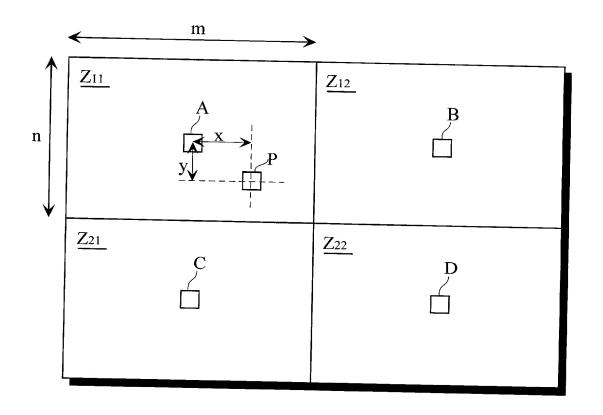


FIG. 11



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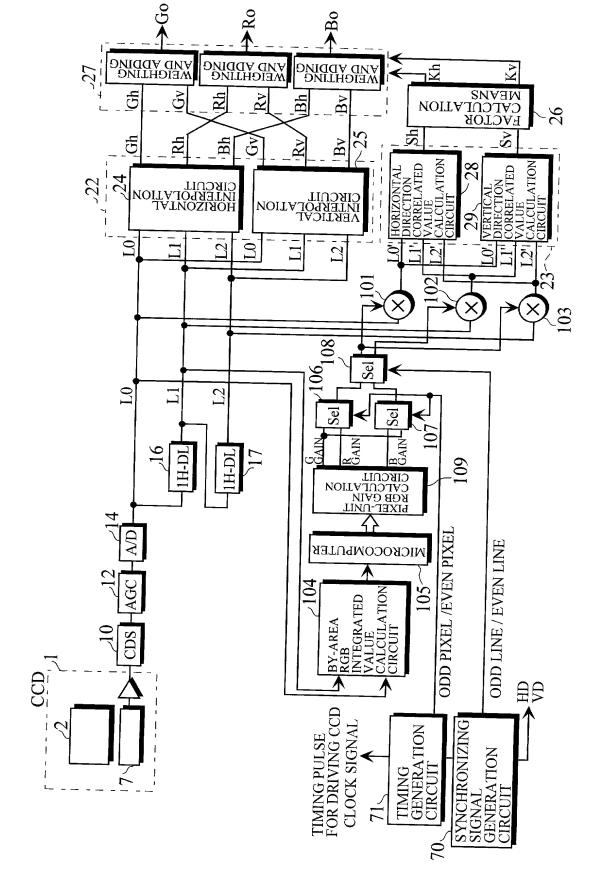


FIG. 12

FIG. 13

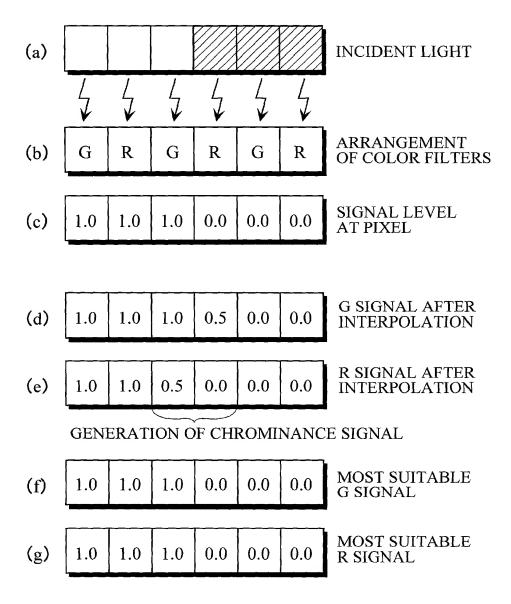


FIG. 14

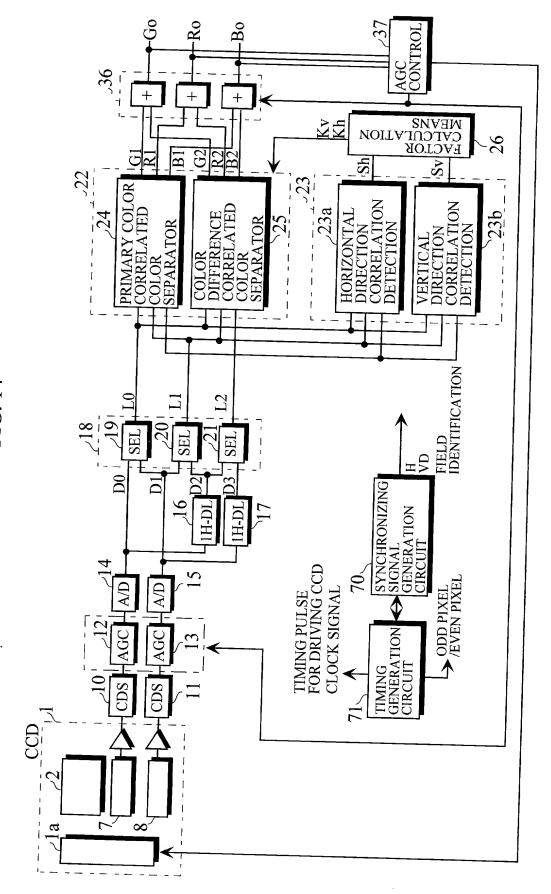


FIG. 15

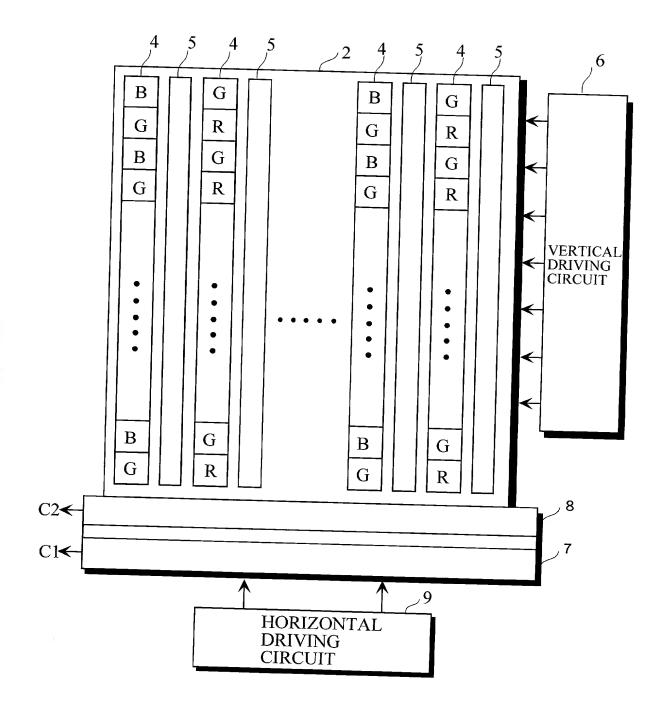


FIG. 16

ODD FIELD \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
(b)D3 GRGRGR · · · · · GRGRGR · · · · · L	2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
(e)D0 $BGBGBG$ · · · · $BGBGBG$ · · · · ·	0
(f) L (g) EVEN FIELD	
(h)D3 GRGRGR · · · · · GRGRGR · · · · ·	
(i) D2 B G B G B G $\cdot \cdot \cdot \cdot \cdot$ B G B G B G $\cdot \cdot \cdot \cdot \cdot$ L2 (j) D1 G R G R G R $\cdot \cdot \cdot \cdot \cdot \cdot$ G R G R G R $\cdot \cdot \cdot \cdot \cdot \cdot$	
L2	

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FIG. 17

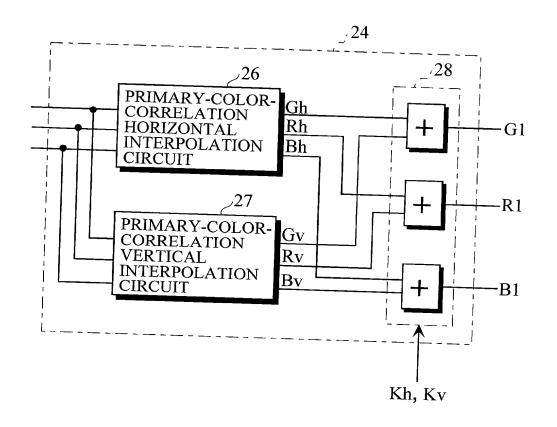


FIG. 18

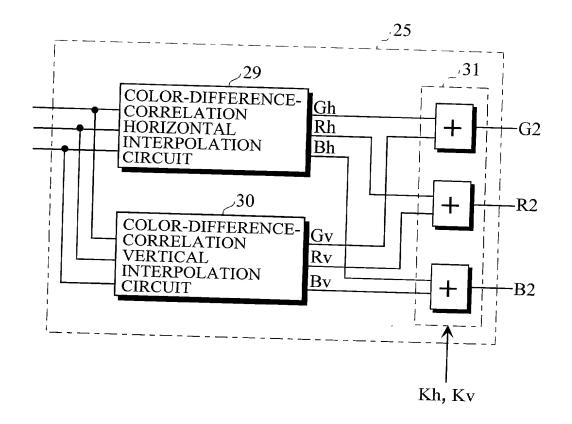


FIG. 19

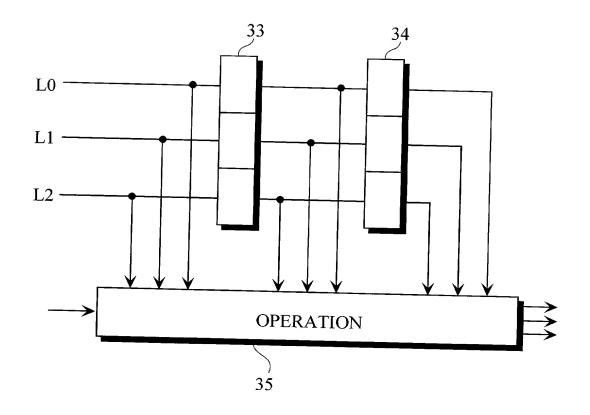


FIG. 20

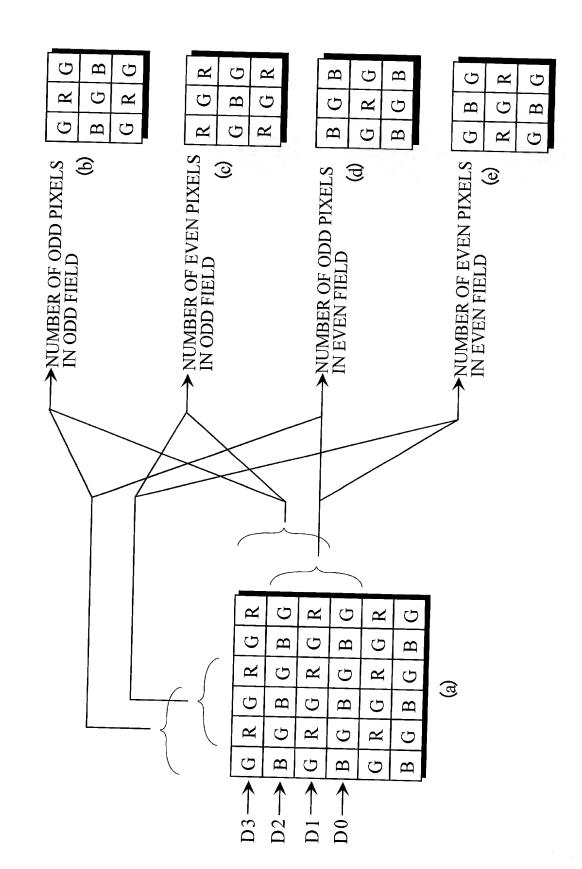


FIG. 21

ODD FIELD	METHOD OF INTERPOLATING G, R, B SIGNAL
ODD PIXEL G11 R12 G13 B21 G22 B23 G31 R32 G33	$Gh = G22$ $Bh = (B21+B23)/2$ $Rh = \frac{G22 \times R12}{G12} = \frac{2(G22 \times R12)}{G11+G13}$ $Gv = G22$ $Rv = (R12+R32)/2$ $Bv = \frac{G22 \times B21}{G21} = \frac{2(G22 \times B21)}{G11+G31}$
EVEN PIXEL R11 G12 R13 G21 B22 G23 R31 G32 R33	$Bh = B22$ $Gh = (G21+G23)/2$ $Rh = \frac{G22 \times R12}{G12} = \frac{(G21+G23)(R11+R13)}{4 \times G12}$ $Bv = B22$ $Gv = (G12+G32)/2$ $Rv = \frac{R21 \times G22}{G21} = \frac{(R11+R31)(G12+G32)}{4 \times G21}$

FIG. 22

ODD FIELD	METHOD OF CALCULATING VERTICAL CORRELATED VALUE (Sv) AND HORIZONTAL CORRELATED VALUE (Sh)
ODD PIXEL G11 R12 G13 B21 G22 B23 G31 R32 G33	Sv = (G11+G13)/2-(G31+G33)/2 Sh = (G11+G31)/2-(G13+G33)/2
EVEN PIXEL R11 G12 R13 G21 B22 G23 R31 G32 R33	Sv = G12 - G32 Sh = G21 - G23

FIG. 23

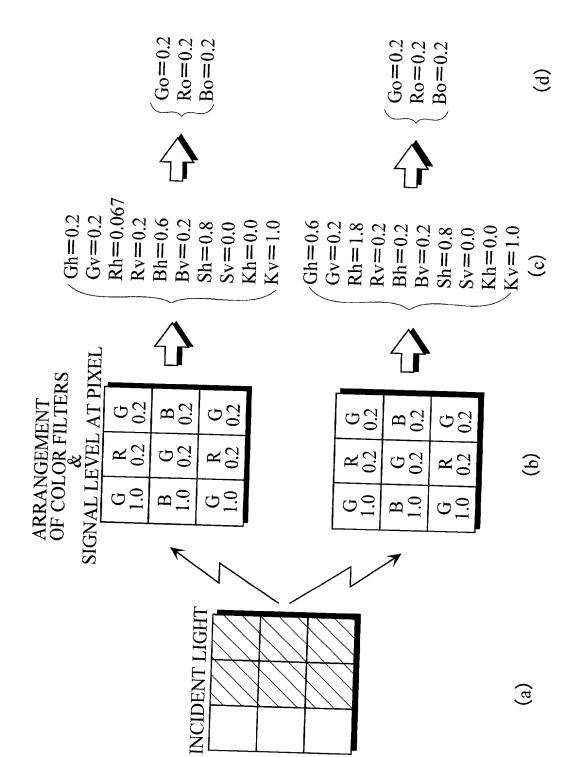


FIG. 24

ODD FIELD	METHOD OF INTERPOLATING G, R, B SIGNAL
ODD PIXEL G11 R12 G13 B21 G22 B23 G31 R32 G33	$Gh = G22$ $Rh = \frac{R12 + R32}{2} - \frac{G11 + G13 + G31 + G33}{4} + G22$ $Bh = \frac{B21 + B23}{2}$ $Gv = G22$ $Rv = \frac{R12 + R32}{2}$ $Bv = \frac{B21 + B23}{2} - \frac{G11 + G13 + G31 + G33}{4} + G22$
EVEN PIXEL R11 G12 R13 G21 B22 G23 R31 G32 R33	$Gh = \frac{G21 + G23}{2}$ $Rh = \frac{R11 + R13 + R31 + R33}{4} - \frac{G12 + G32}{2} + \frac{G21 + G23}{2}$ $Bh = B22$ $Gv = \frac{G12 + G32}{2}$ $Rv = \frac{R11 + R13 + R31 + R33}{4} + \frac{G12 + G32}{2} - \frac{G21 + G23}{2}$ $Bv = B22$

FIG. 25

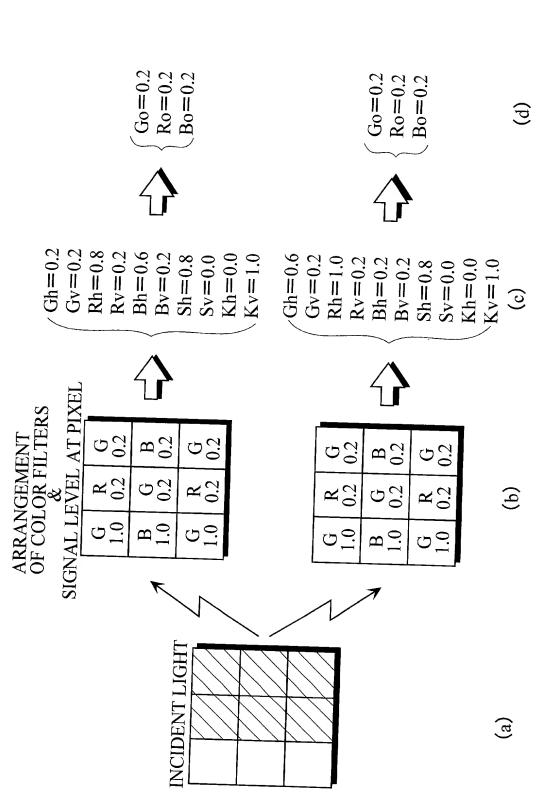


FIG. 26

ODD FIELD	METHOD OF INTERPOLATING G,R,B SIGNAL
ODD PIXEL	Gh=G33
G11 B12 G13 B14 G15	$Rh = \frac{G33 \times (R21 + 6 \times R23 + R25)}{4 \times (G33 + G34)}$
R21 G22R23 G24 R25	$Bh = \frac{4 \times (B32 + B34) \times G33}{G31 + G31 + G33}$
G31B32 G33B34 G35	Gv=G33 Gv=G33
R41 G42R43 G44 R45	$R_{V} = \frac{4 \times (R23 + R43) \times G33}{G13 \times G23}$
G51B52 G53B54 G55	$B_{V} = \frac{G33 \times (B12 + 6 \times B32 + B52)}{(B12 + 6 \times B32 + B52)}$
	4× (G22+G42)
EVEN PIXEL	$_{Gh} = \frac{4 \times (G32 + G34) \times B33}{4 \times (G32 + G34) \times G33}$
B11 G12 B13 G14 B15	B31+6×B33+B35
G21R22G23R24 G25	$Rh = \frac{4 \times (A \times 2 + K \times 4) \times (G35)}{G21 + 6 \times G23 + G25}$
D21C21C21C21	Bh=B33
B31 U32 B33 U34 B35	$G_V = \frac{4 \times (G23 + G43) \times B33}{B13 + C \times B23 + B53}$
G41 R42 G43 R44 G45	D13 T 0 A B33 T B33 D 4 X (R22 + R42) X G33
B51 G52 B53 G54 B55	$RV = \frac{RV}{G12 + 6 \times G32 + G52}$
	Bv=B33

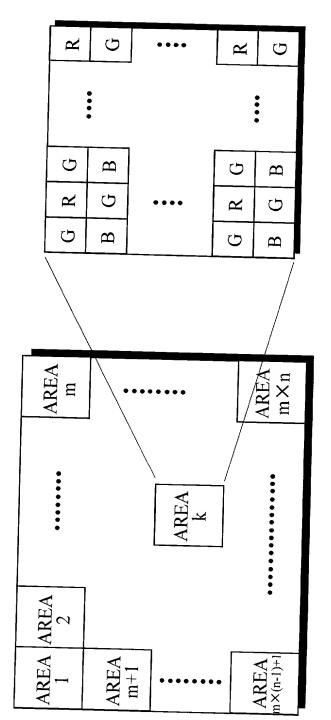
FIG. 27

METHOD OF INTERPOLATING G,R,B SIGNAL	$Gh = G33$ $Rh = \frac{R21 - 2 \times R23 + R25}{8} - \frac{G22 + G24}{2} + G33$ $Bh = \frac{B32 + B34}{2} - \frac{G31 - 2 \times G33 + G35}{8}$ $Gv = G33$ $Rv = \frac{R23 + R43}{2} - \frac{G13 - 2 \times G33 + G53}{8}$ $Bv = \frac{B12 - 2 \times B32 + B52}{8} - \frac{G22 + G42}{2} + G33$	$Gh = \frac{G32 + G34}{2} - \frac{B31 - 2 \times B33 + G35}{8}$ $Rh = \frac{2}{2} + \frac{8}{8} + \frac{2}{2} $
ODD FIELD	ODD PIXEL G11 B12 G13 B14 G15 R21 G22 R23 G24 R25 G31 B32 G33 B34 G35 R41 G42 R43 G44 R45 G51 B52 G53 B54 G55	EVEN PIXEL B11 G12 B13 G14 B15 G21 R22 G23 R24 G25 B31 G32 B33 G34 B35 G41 R42 G43 R44 G45 B51 G52 B53 G54 B55 F

FIG. 28

D METHOD OF INTERPOLATING G,R,B SIGNAL	Gh = G33 $G15$ $R25$ $R35$ $Gh = G33$ $G35$ $Gv = G33$ $R45$ $Rv = R23$ $R45$ $Rv = G33$ $Bv = G33$	EL Gh= $\frac{G32+G34}{2}$ $\frac{B31-2\times B33+B35}{8}$ $\frac{4B15}{4G25}$ Rh= $\frac{4\times (R22+R24)}{(G21+6\times G23+G25)}\times (\frac{G32+G34}{2}$ $\frac{B31-2\times B33+B35}{8}$ $\frac{4B35}{6}$ $\frac{6v=\frac{G23+G43}{2}$ $\frac{B13-2\times B33+B53}{8}$	$ R_{C4} = \frac{2 \times (R22 + R42)}{(G12 + 6 \times G32 + G52)} \times (G23 + G43 - \frac{B13 - 2 \times B33 + B53}{4})$
ODD FIELD	ODD PIXEL G11 B12 G13 B14 G15 R21 G22 R23 G24 R25 G31 B32 G33 B34 G35 R41 G42 R43 G44 R45 G51 B52 G53 B54 G55	EVEN PIXEL B11 G12 B13 G14 B15 G21 R22 G23 R24 G25 B31 G32 B33 G34 B35	B51 G52 B53 G54 B55

FIG. 29



ENTIRE IMAGE

IN AREA k

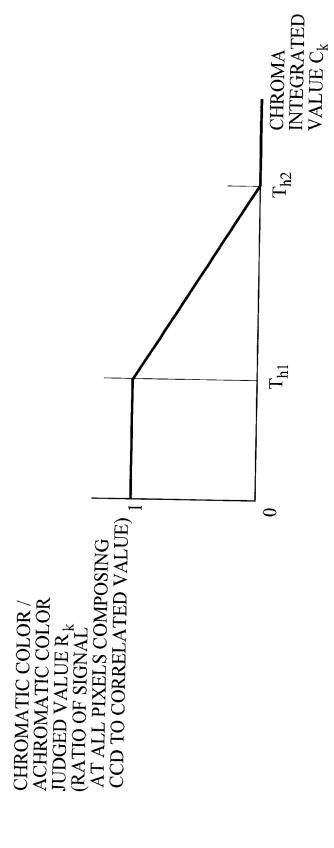


FIG. 31

